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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,483	11/15/2005	Erling Hammer	542-023.002	5287
4955	7590	05/19/2006	EXAMINER	
WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			HE, AMY	
			ART UNIT	PAPER NUMBER
			2858	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) 9-11 and 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/15/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because there are numerous typos in the body of the specification. Appropriate correction is required. Applicant is advised to go through the entire disclosure to correct such errors.

Claim Objections

2. Claims 3, 6, 8, 12 and 14-16 are objected to because of the following informalities:

- (1) Claim 6, line2, replace the typo "5, 5" with --5.5--.
- (2) Claim 6, lines 2-3, replace "obtaining" with --obtain--. And delete the redundant phrase "in the multi phase order to obtaining a penetration depth" after "penetration depth".
- (3) Claim 8, delete the parentheses on line 3.
- (4) Claim 12, line 7, delete the redundant phrase " and a coil".
- (5) Claim 15, line 1, the claim dependency is missing. Add --claim 12-- after "to" and before "in".
- (6) Claims 8 and 16 (claims a single coil design) is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim (claims 1 and 12 claiming a two coil design). Applicant is required to cancel the claim(s), or amend the

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claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

- (7) Claims 3 and 14, replace "Cu (copper)" with either --Cu-- or --copper--.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5-6 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hammer (U. S. Patent No. 6, 782,736).

As for claim 1, Hammer discloses a method (in Figures 4 or 6; see col. 3, lines 1-50; col. 4, lines 31-43; col. 5, line 5-39) for determining the content of a conductive component (water) of a multi phase flow through a pipe, by supplying alternate voltage (using 41; or 62 and 64) to one or more coils (40; or 50 and 57) being arranged around the fluid conducting pipe (44; or 54), and then detecting the attenuation of the magnetic fields due to the induced power loss or the coil impedance at resonance, dependent on the conductivity of any conductive phase component (water) of the fluid flow, characterized in measuring the impedance of the coils at resonance frequency, said impedance varying as a function of content of the conductive phase, by using:

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a first coil design (any one of 40, 50, 57, 42 and 56) having a given number of windings optimized for non-conductive continuous mixtures, and

a second coil design (any one of 40, 50, 57, 42 and 56, as long as it is different from the first coil selected above) of a different number of windings optimized for conductive continuous mixtures (since applicant fails to specifically define how is the coils optimized, any one of the coils as listed above is considered to be optimized for the particular mixtures as claimed).

As for claim 2, Hammer discloses that the two coils are operating at two different frequencies (f_1 and f_2 , see Figure 6) in order to compensate for variation in the conductivity, hence determining said conductivity of the conductive phase.

As for claim 5, Hammer discloses using a resonance frequency in the range of 1-10MHz, and preferably in the range of 2 to 8 MHz (5 to 15 MHz, see claim 2; col. 2, lines 64-65).

As for claim 6, Hammer discloses using a resonance frequency of 5.5 MHz (claim 2; col. 2, lines 64-65) in order to obtaining a penetration depth in the multiphase flow, of about 10 cm, corresponding to at least half the pipe diameter.

As for claim 12, it is the apparatus claim corresponding to the rejected method claim (claim 1). It is rejected for the same reasons as stated above for the rejection of the method claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-4, 7-8, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (U. S. Patent No. 6, 782,736), in view of JP 61204357A (see abstract).

As for claims 3-4, 7-8, and 13-16, Hammer discloses the method/apparatus as in claims 1 and 12. Hammer does not specifically disclose using wire or cords including Cu-lices having a thickness less than the electrical skin depth of copper; or using a flat Cu-lines at a thickness of 40 um; or using a first coil design of one layer of 15 windings of flat Cu-cord, operating at a frequency of 2 MHz, and a second coil design of 4 layers of 4 windings of flat Cu-cord operating at a frequency of 9 MHz; and using one coil of 9 turns. A person of ordinary skill in the art would find it obvious at the time of the invention to modify Hammer to use coil made of copper (Cu-lices is defined as copper in the specification), since it is conventional and routine in the art to use copper coil for its good electrical conductivity, strength, and low cost as evidenced in JP 61204357A (see abstract). In addition, one skilled in the art would find it obvious to choose a specific coil thickness, numbers of layers and windings/turns, and operating frequency, as claimed, dependent upon the specific resources available or required, and since the frequency is determined by the coil thickness and number of windings (see Hammer reference, col. 2, lines 66-67).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (571) 272-2230.

The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH

May 11, 2006.



DIANE LEE
SUPERVISORY PATENT EXAMINER